

Date: Thu, 7 Jul 94 04:30:13 PDT
From: Ham-Ant Mailing List and Newsgroup <ham-ant@ucsd.edu>
Errors-To: Ham-Ant-Errors@UCSD.Edu
Reply-To: Ham-Ant@UCSD.Edu
Precedence: Bulk
Subject: Ham-Ant Digest V94 #213
To: Ham-Ant

Ham-Ant Digest Thu, 7 Jul 94 Volume 94 : Issue 213

Today's Topics:

 Anyone experienced with Cushcraft R7?
 Commercial 33 cm Yagi? (2 msgs)
 Large HF DX antenna (2 msgs)
 R5 to R7 Upgrade?
 Request help identifying this antenna.
 UPDATED..modifying RS fm beam for 2METERS (2 msgs)

Send Replies or notes for publication to: <Ham-Ant@UCSD.Edu>
Send subscription requests to: <Ham-Ant-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Ant Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-ant".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: Thu, 7 Jul 1994 07:49:51 GMT
From: lll-winken.llnl.gov!overload.lbl.gov!dog.ee.lbl.gov!agate!library.ucla.edu!
csulb.edu!csus.edu!netcom.com!herbr@ames.arpa
Subject: Anyone experienced with Cushcraft R7?
To: ham-ant@ucsd.edu

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herbr@netcom.com

Date: 6 Jul 1994 09:39:52 -0500
From: ihnp4.ucsd.edu!usc!howland.reston.ans.net!vixen.cso.uiuc.edu!
newsfeed.ksu.ksu.edu!moe.ksu.ksu.edu!hobbes.physics.uiowa.edu!news.uiowa.edu!
norand.com!westgj@network.ucsd.edu
Subject: Commercial 33 cm Yagi?
To: ham-ant@ucsd.edu

Try DB Products

or

Antenna Specialists

or

MaxRad

Most of the major antenna manufacturers can supply what you need. It may not be in the catalog yet but recent activity in part 15 unlicensed band at 902-928 MHz is begining to drive some commertial products.

I use MaxRad

Guy
NOMMA

Date: Wed, 6 Jul 1994 16:43:07 GMT

From: ihnp4.ucsd.edu!galaxy.ucr.edu!library.ucla.edu!agate!howland.reston.ans.net!
darwin.sura.net!fconvx.ncifcrf.gov!mack@network.ucsd.edu

Subject: Commercial 33 cm Yagi?

To: ham-ant@ucsd.edu

In article <2vefno\$2rk@werewolf.norand.com> westgj@norand.com (Guy West) writes:

>

>Try DB Products

>

>or

>

>Antenna Specialists

>

>or

>

>MaxRad

>

>Most of the major antenna manufacturers can supply what you need. It may not be
>in the catalog yet but recent activity in part 15 unlicensed band at 902-928 MHz
>is begining to drive some commertial products.

>

>I use MaxRad

>

>Guy

>NOMMA

Try AntennaCo, in southern NH, 203-673-4347, run by moonbouncer extraordinaire, Joe Reissert W1JR, who founded his own company after leaving Cushcraft. You will probably get his sidekick Nate, if you phone. Nate is quite helpful.

Joe Mack NA3T
mack@ncifcrf.gov

SORRY THAT's area code (603)!!!!!!-----

Date: 6 Jul 1994 12:05:03 -0700
From: ihnp4.ucsd.edu!library.ucla.edu!europa.eng.gtefsd.com!
howland.reston.ans.net!gatech!asuvax!chnews!ornews.intel.com!ornews.intel.com!not-
for-mail@network.ucsd.edu
Subject: Large HF DX antenna
To: ham-ant@ucsd.edu

In article <2vcrdu\$3kd2@blue.weeg.uiowa.edu> jnmeade@blue.weeg.uiowa.edu (James Meade) writes:

>I am on a farm, with tall trees, barns, windmill, etc and can build a very large antenna. I'd like it to be efficient (so I can jsut use my 100 wat
>transmitter) and inexpensive.

Climb up the windmill tower and fasten insulators all around it. Attach 1000 foot long wires to the insulators and run them out to short posts in the ground. Attach a 500-1000 ohm resistor from the post to a ground rod 4-8 feet long. The antenna wire should be preferably copper but you can use electric fence wire or barbed wire if you need to. Attach open wire feed lines or a switching arrangement at the top of the windmill tower such that you have a number of sloping Vee Beams to select from. Consult the antenna books about apex angle vs. wire length for the appropriate geometry. Center on 20 meters and the rest of the bands will work okay. The 1000 foot length is not critcal but the length should match the apex angles. Any length beyond 200 feet is good, longer is better. Looking down from above it will look like wheel spokes radiating from the windmill.

This antenna is cheap to make but may be complicated to feed if you desire all directiions. Maybe start with one Vee Beam and add more later. Gain will be better than 8dbd and will beat a 4 element yagi.

--
zardoz@ornews.intel.com WA7LDV

Date: Wed, 6 Jul 1994 21:48:16 GMT
From: ihnp4.ucsd.edu!dog.ee.lbl.gov!agate!howland.reston.ans.net!math.ohio-state.edu!darwin.sura.net!news.Vanderbilt.Edu!news@network.ucsd.edu
Subject: Large HF DX antenna
To: ham-ant@ucsd.edu

In a former article we saw...

---begin former article---
From: jnmeade@blue.weeg.uiowa.edu (James Meade)
Subject: Large HF DX antenna
Date: 5 Jul 1994 18:47:10 -0500

I'm interested in suggestions for an efficient and inexpensive DX HF antenna. I'd prefer an all-bander. I work 80 m and 10 m from a Kenwood TS-440S (has internal tuner)

I am on a farm, with tall trees, barns, windmill, etc and can build a very large antenna. I'd like it to be efficient (so I can jsut use my 100 wat transmitter) and inexpensive.

I have the ARRL antenna book, so suggestions supporting particular designs there I can look up.

Any problem areas are especailly welcome.

Thanks

--

Jim - Farmer - Iowa City, IA,

---end former article---

and PFEIFFEM@ctrvx1.Vanderbilt.Edu (PFEIFFEM_1) comments...

Date: 6 Jul 1994 22:24:01 -0400
From: dog.ee.lbl.gov!agate!howland.reston.ans.net!europa.eng.gtefsd.com!news.umbc.edu!eff!news.duke.edu!solaris.cc.vt.edu!news.ans.net!newstf01.cr1.aol.com!search01.news.@@ihnp4.ucsd.edu
Subject: R5 to R7 Upgrade?

To: ham-ant@ucsd.edu

If anyone knows where I can find one of the upgrade kits for a Cushcraft R5 to an R7, I would appreciate the info.

Date: Wed, 6 Jul 1994 02:56:08 GMT
From: ihnp4.ucsd.edu!dog.ee.lbl.gov!agate!howland.reston.ans.net!gatech!swrinde!
cs.utexas.edu!utnut!torn!uunet.ca!uunet.ca!geac!torsqnt!problem!vigard!
mdf@network.ucsd.edu
Subject: Request help identifying this antenna.
To: ham-ant@ucsd.edu

wwatkins@whale.st.usm.edu (William Matt Watkins) writes:

```
>
>
>      |  =
>      |---=
>      |  =
>      =  |
>      =---|
>      =  |
>      |  =
> ANTENNA ----> |---=
>      |  =
>      =  |
>      =---|
>      =  |
>      |
>
```

folded dipole array. common as spit ... check any apartment rooftop, tower, smokestack, etc. sometimes the dipoles are stacked on the same side of the mast, sometimes they "rotate" around the mast. sometimes there are more or fewer than 4 dipoles. [the most i've seen is 8 i think].

>Is it possible to tell if it is a receiving antenna?

yes.

>Is it possible to determine the direction of the incoming signal if I
>know what direction the antenna is facing?

pattern is omnidirectional, with some slight bumps due to the mast.

>Do we have any idea what its range of frequency might be?

1) estimate by guessing the size of the dipoles and assume the transmitter is resonant with them (or the other way around ... whatever).

2) take a frequency counter up to it.

>Is there anything that this design tells us about its use?

no.

--

Matthew Francey

mdf@vigard.mef.org

ve3rqx@io.org

"live before you die"

GPS(NAD27): N43o34.210' W079o34.563' +0093m

Date: Wed, 6 Jul 1994 13:18:52 GMT

From: ihnp4.ucsd.edu!swrinde!howland.reston.ans.net!europa.eng.gtefsd.com!

uhog.mit.edu!nntp.club.cc.cmu.edu!cantaloupe.srv.cs.cmu.edu!dolphin!

ed@network.ucsd.edu

Subject: UPDATED..modifying RS fm beam for 2METERS

To: ham-ant@ucsd.edu

Modifying RS fm beam for 2METERS - UPDATED 7-6-94 Ed.

>

> ** I built one and discovered some length differences in the elements.

> ** My opinion, build it to the longer lengths N3KMJ specs, and try tweaking for

> ** best results, then if it doesnt work try trimming to N3SD0 shorter lengths.

> ** TRIM THE REFLECTOR & DIRECTORS FIRST! THEY AFFECT THE DRIVEN ELEMENT FREQ!

> ** I MADE MY D.E. A BIT SHORT. SWR min at 148. (1.5:1) max at 144 (2.5:1)

> ** It still works well. I was able to 'kerchunk' Morgantown WVA repeaters

> ** 75 miles away over hilly terrain and get s9 squelch tail with 1.5 watts!

> ** Post your results or email Ed@fore.com and I will compile the results.

> ** Perhaps a NEC expert will model this and give us some tips!

> ** I bet this will make a long thread for weeks to come... {:-)

>

> Happy building.

>

> Ed N3SD0

>

>

> -----
> 5 ELEMENT 2 METER BEAM FOR UNDER \$20?!?

>

> ** THESE PLANS WERE TYPED IN AND SHORTENED BY ED N3SD0. **

>

> Converting the Radio Shack FM stereo yagi cat # 15-1636) for 2 meter use.

> by Eric Allison N3KMJ. Tell your friends you got the info from N3KMJ and

> PGH HILLTOPPERS.

>

> Materials List:

>
> drill, 5/8" & 1/16" bits
> cutters/tin snips
> assorted screwdrivers & wrenches...
> qty 6 5/8" long sheet metal screws
> 2 pieces 4" heavy stranded wire (16-18 ga)
> misc wood mast or pvc (needed for vert mount only)
> sealant for connections...
>
>
> INSTRUCTIONS:
>
> STEP 1:
> Drill holes in boom for vertical mounting using 5/8" bit, same position
> as existing holes on sides, but on top/bottom for mounting vertically.
> (for ssb use skip this step)
>
> STEP 2:
> Unfold antenna, & snap elements in place. Using cutters remove all crossing
> wires from elements with plastic insulators. (cut as close to rivet as possible)
>
> STEP 3:
> Completely cut off element between director 2 & 3 (see diagram) as close to
> boom as possible. You can completely remove element & bracket by drilling
> out main rivet to boom. (save this for scrap box future use) {:-))
>
> STEP 4:
> Drill 1/16" holes at base of each element, just below the rivets on directors
> 1,2 and driven element. Install sheet metal screws 1/2 way. These are the
> plastic mounted ones. Be careful to make sure element will snap in place with
> screw installed.
>
> STEP 5:
> Wrap bare stranded wire around left screw on director 1, to right screw on
> director 1, tighten screws & cut off excess.
> (shorting elements together, left to right to make dipole director)
> Then do the same for director 2.
>
> STEP 6:
>
> (ORIGINAL PLANS, LONG LENGTHS N3KMJ)
> ** NOTE ** THESE LENGTHS DID NOT WORK FOR ME, SEE BELOW.
>
> Cut elements to length.
>
> REFLECTOR: 57 1/2"
> DRIVEN ELE: 38 1/2"
> DIRECTOR 1: 37 1/4"

```

> DIRECTOR 2: 36"
> DIRECTOR 3: 34 1/2"
>
>
> =====
>
>
>
> SHORTER LENGTHS BY N3SDO - DETERMINED EXPERIMENTALLY BY SWR & PATTERN TESTS
> ** I TRIMMED THE REFLECTOR DOWN TO 40" IT CHANGED PATTERN A BIT & IT
> ** ALSO CHANGED THE SWR MIN FREQ.  OOPS I CUT TOO MUCH FROM D.E. YOU CAN LEARN
> ** FROM MY MISTAKE.
>
> ** CUT DRIVEN ELE. A BIT LONG THEN TRIM DOWN FOR LOW SWR AT BAND CENTER!!! **
>
>
> REFLECTOR:  40"
> DRIVEN ELE: 36.5"  (SWR ABOUT 1.5:1 MIN AT 148 MHZ WITH 35.5" (too hi) )
> DIRECTOR 1: 35"
> DIRECTOR 2: 34.5"
> DIRECTOR 3: 33.75"
>
>
> FIELD STRENGTH TESTS SHOW FORWARD LOBE FS10 WITH BACK LOBE UNDER FS1,
>
> ** UPDATED PATTERN 7-5-94  10:00 PM EST, CONFIRMED BY RECEIVING TESTS
>
>      .      < FS 10
>      .  .
>      .  .
>      .  .
>      .  .
>      .  .
>      | <VERTICAL MOUNTING
>      0 0  < 2 SMALL SIDE LOBES AT REAR WITH STRONG NULL AT REAR CENTER
>           < FS .25
>
>
>
> FOR FS REFERENCE:END FED 1/2 WAVE DIPOLE APPROX FS 1.75 - 2
>
> N3SDO CRUDE FIELD TESTS:
> ANTENNA ON WOODEN POLE, CENTER OF ELEMENTS ABOUT 7' FROM SOGGY GROUND.
> FIELD STRENGTH METER (HOMEBREW) COAX FED BY BEAM.
> SIGNAL SOURCE XYL WITH 1.5W HT HELD OVER HEAD @ 20' FROM BEAM.
> ED  N3SDO  {:-)
>
>
>

```



```

> MEASUREMENTS OF A FACTORY MADE 3 ELEMENT BEAM ASSEMBLED FROM BOX OF PARTS
> MFG UNKNOWN, INCLUDED FOR ELEMENT LENGTH REFERENCES.  N3SD0
>
> REFLECTOR: 40.25"
> DRIVEN ELE: 36"      (INCLUDED MATCHING SHUNT & COAX CABLE BALUN 32" LONG)
> DIRECTOR 1: 35 1/8"
>
>
> ED  N3SD0  {:--)
> =====
>
> STEP 7:
> Assemble antenna as per instructions for mounting hardware, end caps ...
> Attach to pvc pipe if vert.  Attach coax, to driven element.  strip about 3"
> of coax shield, attach center & shield to driven element screws and tighten.
> Caution, don't allow shield to short to mast.
> Use silicone or sim to weatherproof.
>
> ** NOTE THAT THIS DOES NOT SPEC ANY TYPE OF BALUN OR IMPEDANCE MATCHING
> ** NETWORK.  I HAVE FOUND THAT COAX PLACEMENT IS A BIT CRITICAL, BUT NOT
> ** BAD.  I TAPED THE COAX TO THE MAST AND DID NOT NOTICE SWR FLUCTUATIONS
> ** WHEN I MOVED THE CABLE AROUND.  PERHAPS A BALUN MIGHT IMPROVE SWR FURTHER.
>  N3SD0
>
>
>
> Conclusion;
> This antenna is mainly for repeater work 145-147.  With 3 of these antennas in
use
> the unscientific HILLTOPPER tests show an approx 8-10 db forward gain with about
> 2dbs off the back.  The radiation pattern is very sharp, with fairly weak side
> lobes.  These babys aim like a rifle!, so be prepared for some rotor tweaking.
> ENJOY!
>
>
>
> DIAGRAM:
>
>
>          X          DRIVEN      | <REF
>      |      |      |      |      |
>      |      X      |      |      |
>      =====0=0=====
>      |      X      |      |      |
>      |      |      |      |      |
>          X          |      |
>      ^      ^      ^      ^      |
>      DIR  3      ^      2      1

```

> ^
> ^
> REMOVE X
>
>
>
>
>
> COMPOSED BY N3KMJ, TRANSCRIBED & SHORTENED.
> ** ANYTHING UNCLEAR IN THE INSTRUCTIONS, PLEASE CONTACT ED@FORE.COM
> TEXT IN UPPER CASE ADDED BY ED N3SDO - AKA ED@FORE.COM

Date: Wed, 6 Jul 1994 17:43:53 GMT
From: ihnp4.ucsd.edu!swrinde!gatech!newsxfer.itd.umich.edu!isclient.merit.edu!
msuinfo!netnews.upenn.edu!netaxs.com!gsm001!gsm@network.ucsd.edu
Subject: UPDATED..modifying RS fm beam for 2METERS
To: ham-ant@ucsd.edu

Ed Bathgate (ed@fore.com) wrote:
: Modifying RS fm beam for 2METERS - UPDATED 7-6-94 Ed.
: >

Does anyone know the velocity factor for R/S antenna aluminum? I am
trying to do a similar conversion for 902 Mhz (on a UHF beam) and need
to calculate the element size.

73,

Geoff.

--
"I am number six. Others come and others go, but I am always number six."
(From the movie "Eminent Domain".)

Geoffrey S. Mendelson N30WJ (215) 242-8712 gsm@mendelson.com

Date: 6 Jul 1994 16:55:35 GMT
From: ihnp4.ucsd.edu!usc!math.ohio-state.edu!magnus.acs.ohio-state.edu!
peri.acs.ohio-state.edu!rdixon@network.ucsd.edu
To: ham-ant@ucsd.edu

References <2vd0vq\$jss@news.acns.nwu.edu>, <2vefno\$2rk@werewolf.norand.com>,
<CsJ2Fv.KHE@ncifcrf.gov>cs.ohi
Reply-To : Bob_Dixon@osu.edu

Subject : Re: Commercial 33 cm Yagi?

Down East Microwave makes a number of antennas for this band. They advertise in QST.

Bob W8ERD

End of Ham-Ant Digest V94 #213
